PROCEEDINGS OF SPIE

International Conference on Optics in Precision Engineering and Nanotechnology (icOPEN2013)

Chenggen Quan
Kemao Qian
Anand Asundi
Editors

9–11 April 2013
Singapore

Organized by
Optics and Photonics Society of Singapore • Centre for Optical and Laser Engineering, Nanyang Technological University (Singapore) • A*STAR National Metrology Center (Singapore)

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Supported by
National University of Singapore (Singapore) • Automatic Optical Inspection Equipment Association (Taiwan) • Japan Society for Precision Engineering • Singapore Institute of Manufacturing Technology, A*STAR (Singapore) • Laser Institute of America

Published by
SPIE

Volume 8769

Proceedings of SPIE 0277-786X, V. 8769

International Conference on Optics in Precision Engineering and Nanotechnology (icOPEN2013), edited by Chenggen Quan, Kemao Qian, Anand Asundi, Proc. of SPIE Vol. 8769, 876901

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Please use the following format to cite material from this book:
Author(s), "Title of Paper," in *International Conference on Optics in Precision Engineering and Nanotechnology (icOPEN2013)*, edited by Chenggen Quan, Kemao Qian, Anand Asundi, Proceedings of SPIE Vol. 8769 (SPIE, Bellingham, WA, 2013) Article CID Number.

ISSN: 0277-786X
ISBN: 9780819495679

Published by
SPIE
P.O. Box 10, Bellingham, Washington 98227-0010 USA
Telephone +1 360 676 3290 (Pacific Time) ·Fax +1 360 647 1445
SPIE.org

Printed in the United States of America.

Publication of record for individual papers is online in the SPIE Digital Library.

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The CID Number appears on each page of the manuscript. The complete citation is used on the first page, and an abbreviated version on subsequent pages. Numbers in the index correspond to the last two digits of the six-digit CID Number.

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Introduction

The second conference of the Optics and Photonics Society of Singapore - the international conference on Optics in Precision Engineering and Nanotechnolgy (icOPEN2013) was successfully held 9–11 April 2013 at Singapore Expo. The conference was collocated with MTA2013 Exhibition, a leading exhibition in Precision Engineering in the region with over 500 exhibitors from 31 countries and regions. This event featured technologies related to metrology, machine tools and tooling systems. It focused on high–value manufacturing capabilities in aerospace, oil and gas, medical technology and complex equipment. The conference was attended by 182 delegates from 16 countries including students, academicians and company researchers.

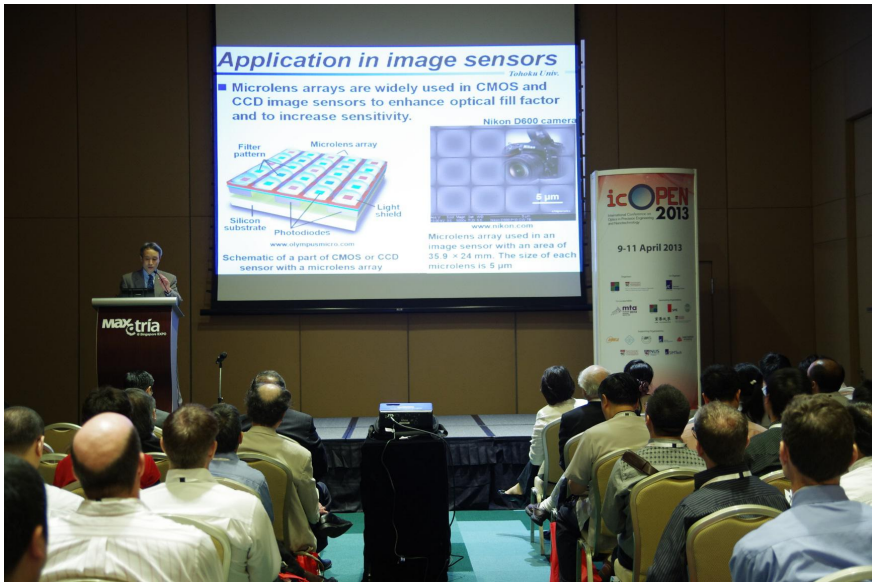
Precision engineering and nanotechnology are exploring disruptive technologies to address the increased demands on design, manufacturing, and testing of precise surfaces. There are various advantages to be gained from these surfaces and hence novel solutions are needed. Optics and photonics provided these technologies in manufacturing using lasers and related technologies and in metrology with the development of fast, non-contact, and high resolution measurement. The exhibits attested to this fact with many companies exhibiting novel precision manufacturing and metrology system using optical technologies. Hence this conference was very timely to introduce to the precision engineering community the technological advances in optical engineering which can help revolutionize the precision engineering sector from design through fabrication to testing.

A plenary speaker from Tohoku University (Japan) provided insights into "Surface form metrology of micro-optics," and two special sessions of invited papers highlighted the interesting topics on "Optical Metrology of Functional Surface" and "Micro-Optics." In addition, six sessions of invited papers covered the topics on Surface Metrology and Precision Engineering, Digital Image Correlation, Dynamics Measurement, 3D Shape Measurement, Information Security, and Fringe Analysis. Furthermore, Computational Optics and Image Processing were developed to highlight these novel topics vital both for design and testing especially for Nanotechnology. Other topics include Optical Metrology and Instrumentation, Optical Design including nanoscale optics, optical fabrication, sensors and actuators as well as fiber optic sensors.

We take this opportunity to thank all speakers and authors for contributing to the success of the conference, to members of the organizing committee for their assistance and enthusiastic support, to the session chairs, to our sponsors, and to the staff of Singapore Exhibition Services Pte Ltd for ensuring the efficient execution of the conference program.

Chenggen Quan
Kemao Qian
Anand Asundi

Chairman Prof Asundi addressed the delegates at the opening ceremony



Prof Gao Wei presented the keynote lecture